WHAT IS CLAIMED IS:

1. A method of navigating a spinal subarchnoid space in a living being, comprising:

percutaneously introducing a device into the spinal subarachnoid space at an entry location, the device having a first passageway sized to slidably receive, and work with, at least a guidewire; and

advancing the device within the spinal subarachnoid space at least more than 10 centimeters from the entry location.

2. The method of claim 1, further comprising:

removing a portion of the brain of the living being.

3. The method of claim 1, wherein the living being contains cerebrospinal fluid, and further comprising:

flushing at least some cerebrospinal fluid in order to remove blood from that cerebrospinal fluid.

4. The method of claim 1, further comprising:

inducing hypothermia in at least some brain tissue.

5. The method of claim 1, further comprising:

accessing at least one ventricle located within the head with a second device introduced through the first passageway of the device.

6. The method of claim 5, further comprising:

draining at least one ventricle located within the head.

7. The method of claim 1, wherein the device includes a second passageway sized to slidably receive, and work with, at least a guidewire.

8. The method of claim 7, further comprising:

introducing an endoscope through the first passageway of the device.

9. The method of claim 7, wherein the device includes a first sub-elongated member that has the first passageway, and a second sub-elongated member coupled to the first sub-elongated member, the second sub-elongated member having the second passageway.

10. The method of claim 9, wherein the device further includes a braiding material wrapped around the first and second sub-elongated members.

11. The method of claim 1, wherein a cross section taken along the device has a shape that is non-circular.

12. The method of claim 1, further comprising:

altering the temperature of at least some brain tissue using a pumping apparatus.

13. The method of claim 1, further comprising:

delivering medication to an intracranial subarachnoid space.

14. The method of claim 1, wherein the device includes a wall to which an electroencephalography electrode is attached.

15. The method of claim 1, wherein the device includes a wall to which a sensor useful for monitoring a biochemical property is attached, and further comprising:

monitoring either pH, glucose concentration, oxygen tension, carbon dioxide concentration, or sodium concentration using the sensor.

16. The method of claim 1, wherein the device includes a wall to which a thermal sensor useful for monitoring temperature is attached, and further comprising:

monitoring temperature using the thermal sensor.

17. The method of claim 1, further comprising:

introducing an apparatus through the first passageway of the device; and

applying electric current, heat, or cryothermal stimulation to a tissue within the living being using the apparatus.

18. The method of claim 1, further comprising:

introducing a radioactive pellet through the first passageway of the device; and

placing the radioactive pellet within the living being in order to irradiate a tumor.

19. The method of claim 1, further comprising:

introducing a detector through the first passageway of the device; and

placing the detector within the living being.

20. The method of claim 19, further comprising:

monitoring a physiologic or biochemical property using the detector.

21. The method of claim 1, further comprising:

introducing a penetration apparatus through the first passageway of the device, the penetration apparatus including an outer sleeve element and an inner puncture element, the outer sleeve element and the inner puncture element being slidably coupled together; and

puncturing the pia matter using the penetration apparatus.

22. The method of claim 1, further comprising:

creating a lesion in the brain of the living being.

23. The method of claim 1, wherein the advancing is achieved via a robotic device.

24. The method of claim 1, further comprising:

monitoring the position of the device for a period of time using magnetic resonance imaging, fluoroscopy, endoscopy, computed tomography, thermal imaging, sonography, or any combination of these.

25. The method of claim 1, further comprising:
introducing an electrode through the first passageway of the device; and
placing the electrode within the living being.

26. The method of claim 25, wherein the electrode is an electroencephalography electrode and the placing includes placing the electroencephalography electrode proximate brain tissue.

27. The method of claim 1, further comprising:
introducing material through the first passageway of the device; and
placing the material proximate a cranial nerve to assist in treating a neurologic condition.

28. The method of claim 1, further comprising:
introducing genetic material through the first passageway of the device; and
placing the genetic material within the living being to assist in treating a neurologic condition.

29. A method of navigating a spinal subarchnoid space in a living being, comprising:
percutaneously introducing a device into the spinal subarachnoid space, the device having a first passageway sized to slidably receive, and work with, at least a guidewire; and
advancing the device within the spinal subarachnoid space to facilitate intracranial access with a second device introduced through the first passageway.

30. The method of claim 29, further comprising:
removing a portion of the brain of the living being.

31. The method of claim 29, wherein the living being contains cerebrospinal fluid, and further comprising:

flushing at least some cerebrospinal fluid in order to remove blood from that cerebrospinal fluid.

32. The method of claim 29, further comprising:
inducing hypothermia in at least some brain tissue.

33. The method of claim 29, further comprising:
accessing at least one ventricle located within the head with a second device introduced through the first passageway of the device.

34. The method of claim 29, wherein the device includes a second passageway sized to slidably receive, and work with, at least a guidewire.

35. The method of claim 34, wherein the device includes a first sub-elongated member that has the first passageway, and a second sub-elongated member coupled to the first sub-elongated member, the second sub-elongated member having the second passageway.

36. The method of claim 29, wherein the device includes a wall to which a sensor useful for monitoring a biochemical property is attached, and further comprising:
monitoring either pH, glucose concentration, oxygen tension, carbon dioxide concentration, or sodium concentration using the sensor.

37. The method of claim 29, further comprising:
introducing an apparatus through the first passageway of the device; and
applying electric current, heat, or cryothermal stimulation to a tissue within the living being using the apparatus.

38. The method of claim 29, further comprising:
introducing a radioactive pellet through the first passageway of the device; and
placing the radioactive pellet within the living being in order to irradiate a tumor.

39. The method of claim 29, further comprising:
introducing a detector through the first passageway of the device; and
placing the detector within the living being.

40. The method of claim 39, further comprising:
monitoring a physiologic or biochemical property using the detector.

41. The method of claim 29, wherein the advancing is achieved via a robotic device.

42. The method of claim 29, further comprising:
monitoring the position of the device for a period of time using magnetic resonance imaging, fluoroscopy, endoscopy, computed tomography, thermal imaging, sonography, or any combination of these.

43. The method of claim 29, further comprising:
introducing an electrode through the first passageway of the device; and
placing the electrode within the living being.

44. The method of claim 43, wherein the electrode is an electroencephalography electrode and the placing includes placing the electroencephalography electrode proximate brain tissue.

45. A method of navigating a spinal subarachnoid space within a living being, comprising:
introducing a non-endoscopic device into the spinal subarachnoid space, the non-endoscopic device having a passageway;
advancing the non-endoscopic device within the spinal subarachnoid space and toward the head of the living being to facilitate intracranial access with a second device introduced through the passageway; and

monitoring the position of the non-endoscopic device for a period of time using an imaging modality other than an endoscope.

46. A medical device suited for attachment to a patient's skin, comprising:

a member having two ends and a first passageway sized to slidably receive, and work with, at least a guidewire;

a skin-attachment apparatus configured to be coupled to the member at a coupling location that is between the two ends, the skin-attachment apparatus having a flexible skin-attachment flap configured for attachment to the skin; and

a valve apparatus configured to be coupled to one end of the member, the valve apparatus and the skin-attachment apparatus defining a flexible member portion between them when both are coupled to the member.

47. The medical device of claim 46, wherein the coupling location is variable during a procedure.

48. The medical device of claim 46, further comprising a second skin-attachment apparatus configured to be coupled to the member at a second coupling location that is spaced apart from the coupling location.

49. The medical device of claim 46, wherein the flexible member portion has a length of at least 2 centimeters.

50. The medical device of claim 46, wherein a cross section taken along the member has a shape that is non-circular.

51. The medical device of claim 46, wherein the member has a second passageway.

52. The medical device of claim 51, wherein the member includes a first sub-elongated member that has the first passageway, and the medical device further

comprises a second sub-elongated member coupled to the first sub-elongated member, the second sub-elongated member having the second passageway.

53. The medical device of claim 46, wherein the member is bendable, and is configured to retain a shape after being bent.

54. The medical device of claim 46, wherein the valve apparatus is configured for use with a robotic device.

55. The medical device of claim 46, wherein the member has a length, and a stiffness that varies along the length.

56. The medical device of claim 46, wherein the two ends of the member are first and second ends, the valve apparatus is configured to be coupled to the first end, the member has a distal portion near the second end, and wherein the distal portion includes a wall that has an electroencephalography electrode therein.

57. The medical device of claim 46, wherein the two ends of the member are first and second ends, the valve apparatus is configured to be coupled to the first end, the member has a distal portion near the second end, and wherein the distal portion includes a wall that has a sensor useful for monitoring a biochemical property.

58. The medical device of claim 57, wherein the biochemical property is pH, glucose concentration, oxygen tension, carbon dioxide concentration, or sodium concentration.

59. The medical device of claim 46, wherein the two ends of the member are first and second ends, the valve apparatus is configured to be coupled to the first end, the member has a distal portion near the second end, and wherein the distal portion includes a wall that has a thermal sensor useful for monitoring temperature.

60. The medical device of claim 46, further comprising a flush line coupled to the valve apparatus.

61. The medical device of claim 46, wherein the flexible skin-attachment flap includes padding material.

62. The medical device of claim 46, wherein the valve apparatus includes a hub configured for attachment to other medical devices.

63. A sheath suited for attachment to a patient's skin, comprising:

a member having a first end, a second end, and a first passageway sized to slidably receive, and work with, at least a guidewire;

a skin-attachment apparatus configured to be coupled to the non-rigid member at a coupling location that is between the first and second ends, but at least 2 centimeters from the first end, the skin-attachment apparatus having a flexible, padded skin-attachment flap configured for attachment to the skin; and

a valve apparatus configured to be coupled to the first end of the member, the valve apparatus and the skin-attachment apparatus defining a flexible member portion between them when both are coupled to the member;

wherein the coupling location may be varied either prior to or after attachment of the sheath to the skin.